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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/621,129

07/16/2003

Yuriy Gmirya

67,008-070;S-5668

1958

26096 7590 02/06/2007
CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

EXAMINER

LE, DAVID D

ART UNIT

PAPER NUMBER

3681

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/621,129</p>	<p>Applicant(s)</p> <p align="center">GMIRYA, YURIY</p>	
	<p>Examiner</p> <p align="center">David D. Le</p>	<p>Art Unit</p> <p align="center">3681</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-24 and 26-45 is/are pending in the application.
- 4a) Of the above claim(s) 28-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-24,26,27 and 38-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is the seventh Office action on the merits of Application No. 10/621,129, filed on 16 July 2003. Claims 1, 3-24, and 26-45 are pending. Of those pending claims, claims 28-37 are withdrawn from consideration as being directed to a non-elected species.

Documents

2. The following documents have been received and filed as part of the patent application:

- Information Disclosure Statement, received on 7/16/03
- Information Disclosure Statement, received on 08/24/05
- Replacement Drawings, received on 06/06/06
- Replacement Drawings, received on 11/17/06

Drawings

3. The drawings were received on 17 November 2006. These drawings are approved.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 41-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claims 41 and 45 recite the limitation “a first spur gear periphery of said first spur gear and a second spur gear periphery of said second spur gear at least partially overlaps an output gear periphery of said output gear adjacent a first side of said output gear, and a face gear periphery of said face gear at least partially overlaps said output gear periphery adjacent a second side of said output gear”. It is unclear what the claimed limitation is referring to by “at least partially overlaps an output gear periphery of said output gear adjacent a first side of said output gear, and a face gear periphery of said face gear at least partially overlaps said output gear periphery adjacent a second side of said output gear”.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1, 3, 4, 12, 16-24, 38 and 41-44 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 4,489,625 to White.**

Claims 1, 3, 4, 12, 16-24, 38 and 41-44:

White (i.e., Fig. 8; column 4, line 8 – column 12, line 12) discloses a split-torque transmission comprising:

- A main rotor shaft (i.e., Fig. 8, element 101);
- An output gear (i.e., Fig. 8, element 100);
- A first engine (i.e., Fig. 8, element 102);

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- A second engine (i.e., Fig. 8, element 103);
- An input shaft (i.e., Fig. 8, element 106) driven by one of the first and second engines;
- A face gear (i.e., Fig. 8, element 115) driven by the input shaft about a face gear axis of rotation (see Fig. 8);
- A first spur gear (i.e., Fig. 8, element 117, and column 5, lines 15-18) mounted for rotation about a first spur gear axis of rotation (see Fig. 8);
- A first drive gear (i.e., Fig. 8, element 108) driven by the first spur gear;
- A second spur gear (i.e., Fig. 8, element 117, and column 5, lines 15-18) mounted for rotation about a second spur gear axis of rotation (see Fig. 8);
- A second drive gear (i.e., Fig. 8, element 108) driven by the second spur gear;
- A floating pinion gear (i.e., Fig. 8, element 116) driven by a radially unsupported pinion shaft mounted to the face gear, the floating pinion gear meshed with the first spur gear and the second spur gear, and the floating pinion gear mounted for rotation about a floating pinion axis of rotation which provides a resilient characteristic (i.e., Fig. 8; column 11, lines 26-43);
- Wherein the floating pinion gear is meshed with the first spur gear and the second spur gear (i.e., Fig. 8);
- Wherein the floating pinion axis of rotation, the first spur gear axis of rotation, and the second spur gear axis of rotation are located along a common line (i.e., column 11, lines 26-32);

- Wherein the floating pinion axis of rotation is displaceable off said common line to split a load between the first spur gear and the second spur gear (i.e., column 11, lines 32-37);
- Wherein the radially unsupported pinion shaft is driven through a gear mesh (i.e., Fig. 8, being the meshing of the spiral bevel gear teeth arrangement of gear elements 114 and 115) generally transverse to the floating pinion axis of rotation (i.e., Fig. 8);
- Wherein the floating pinion gear is mounted to the radially unsupported pinion shaft in a cantilever manner (i.e., Fig. 8);
- Wherein the floating pinion gear is mounted to a distal end of the radially unsupported pinion shaft (i.e., Fig. 8);
- Wherein a displacement envelope within which the floating pinion gear axis of rotation may be displaced is non-linear (i.e., column 11, lines 26-37);
- Wherein a displacement envelope within which the floating pinion gear axis of rotation may be displaced is inherently transverse to the floating pinion gear axis of rotation;
- Wherein a displacement envelope, within which the floating pinion gear axis of rotation may be displaced to split the load between the first spur gear and the second spur gear, generally includes diamond shape; and
- Wherein the floating pinion axis of rotation, the first spur gear axis of rotation, and the second spur gear axis of rotation are generally parallel (i.e. Fig. 8 and column 11, lines 26-37).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 5-11, 13-15, 26, 27, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over White in view of U. S. Patent No. 5,813,292 to Kish et al.**

Claims 5-11, 13-15, 26, 27, 39, 40 and 45:

White discloses the limitations as set forth in paragraph 7 above. Regarding claims 5-11, 13-15, 26, 27, 39 and 40, White lacks:

- A first double helical gear driven by the first spur gear;
- A second double helical gear driven by the second spur gear; and
- Wherein the first double helical gear is of a smaller diameter than the first spur gear and the second double helical gear is of a smaller diameter than the second spur gear.

Kish (i.e., Figs. 1-2 and 6; column 1, line 50 – column 13, line 62), on the other hand, teaches a split path transmission system comprising:

- A first double helical gear (i.e., Fig. 1, element 118L Fwd or 118R Fwd) driven by the first spur gear;
- A second double helical gear (i.e., Fig. 1, element 118L Fwd or 118R Fwd) driven by the second spur gear; and

- Wherein the first double helical gear is of a smaller diameter than the first spur gear and the second double helical gear is of a smaller diameter than the second spur gear (i.e., Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify White such that the first and second drive gears are double helical gears and the diameter of the first and second double helical gears are smaller than the first and second spur gears, in view of Kish, in order to provide an effective equal torque splitting transmission.

Response to Arguments

10. Applicant's arguments filed on 17 November 2006 have been fully considered but they are not persuasive.

Applicant argues, "The Examiner fails to specifically identify a radially unsupported pinion shaft disclosed or suggested by White". Therefore, White completely fails to disclose or suggest that the drive pinion 116 is mounted to a radially unsupported pinion shaft.

Examiner respectfully disagrees because, Fig. 5 of White'625 reference discloses a drive pinion 54, which is similar to the drive pinion 116, is mounted to a radially unsupported pinion shaft; and therefore, White'625 reference does suggest that the drive pinion 116 is mounted to a radially unsupported pinion shaft.

Accordingly, as set forth above, the applied references meet the claimed limitations.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

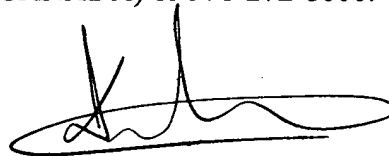
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Le whose telephone number is 571-272-7092. The examiner can normally be reached on Mon-Fri (0700-1530).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'David D. Le', with a large, sweeping horizontal flourish underneath the name.

David D. Le
Examiner
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02/05/2007

ddl